APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,558	01/11/2002	Jian Fan	10018003-1	9516

7590   09/14/2005

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EXAMINER
LE, BRIAN Q

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2005*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8,10,15-19,21 and 23-25* is/are rejected.

7)☒ Claim(s) *7, 9, 11-14, 20, and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/31/05*

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Allowable Subject Matter

1.   The indicated allowability of claims 1-20 is withdrawn in view of the newly discovered reference(s) to Averbuch et al. US 2003/0081836. Rejections based on the newly cited reference(s) follow. The Examiner is regretted to withdraw the allowance and would like to apologize for the inconvenience may have caused the Applicant. However, Applicant's understanding is expected to help the PTO Agency to maintain a high quality in patenting filing application. The reason to withdrawn the allowance is that the term "edge-bounded averaging" is not clearly defined in the specification and thus opened to broad and subject interpretation. As cited on page 6 of the original specification :" An edge-bounded averaging at location (i,j) **may be** defined as the average value of connected pixels within a mask centered at (i,j). (emphasis added). Thus, it is not necessary that edge-bounded averaging is the average value of connected pixels within a mask centered at (i,j).

Drawings

2.   The drawings were received on 06/30/2005. These drawings are accepted.

Claim Objections

3.   The objection of claims 9, and 24-25 is withdrawn.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5.   Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the

specification in such a way as to enable one skilled in the art to which it pertains, or with which

it is most nearly connected, to make and/or use the invention. Regarding claim 10, the concept of

"starting from a first side of a line proceeding to a second side of the line to identifying

consecutive segments of pixels as non edge, white edge or black edge" (emphasis added) is not

supported in the specification. The Applicant is advised to clearly point out (page number and

line number) for the support of this limitation.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

7.   Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Averbuch et al.

PGPUB U.S 2003/0081836.

Regarding claim 1, Averbuch teaches a method to identify text-like pixels from an image,

the method (the method of segment and classify pixels to similar characteristics whether similar

gray tone or texture) (page 1, first column, first paragraph) comprising:

(a) providing an image;(abstract) and

(b) classifying line segments of pixels (classify as foreground or background) (page 12,

first column, [0093]) within the image by edge-bounded averaging (average of pixels along the

object boundary) (page 12, [0098], [0099], and [0100]).

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

9.   Claims 1-4, 6 and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee

et al. U.S. Patent No. 6,160,913.

Regarding claim 1, Lee teaches a method to identify text-like pixels(character) from an

image, the method (column 2, lines 27-33) comprising:

(a) providing an image;(FIG. 1, element 12) and

(b) classifying line segments of pixels (halftone pixel classification) (FIG. 4, element

402) within the image by edge-bounded averaging (average pixel intensity value within pixel

window centered about pixel position (i,j) as clearly defined in the original specification)

(column 6, lines 30-40).

For claim 2, Lee further teaches the method further comprising:

(c) examining sub-blobs of pixels (the analysis of halftone by pixel run) within the image

(FIG. 12); and

(d) performing sub-blob connectivity analysis (perform analysis of halftone by the

connectivity of pixels run) (FIG. 12).

Referring to claim 3, Lee teaches the method further comprising:

(e) identifying and classifying edges of pixels within the image (column 2, lines 55-65);

(f) performing filling to further classify pixels within the image (re-assigning step)

(column 2, line 65 to column 3, lines 10).

(g) performing consistency analysis of pixels within the image (perform uniformity of

pixel) (column 4, lines 54-67).

(h) performing pixel connectivity analysis of pixels within the image; and

(i) identifying text pixels within the image (column 2, lines 30-33).

For claim 4, Lee teaches the method wherein the image is a digital image (column 2, lines

35-40).

For claim 6, Lee discloses the method further comprising smoothing the image (column

9, lines 5-20).

For claim 23-25, please refer back to claims 1-3 for the teaching and explanations.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

11.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of

Averbuch et al. PGPUB U.S 2003/0081836 and Kodaira et al. U.S 6,868,183 as applied to claim

1 above.

Regarding claim 5, Averbuch does not explicitly teach the method comprising

performing color space conversion of the image. Kodaira teaches a method of processing text-

like pixels (column 4, lines 58-65) comprises a color space conversion mean (column 16, lines 1-

20). Modifying Averbuch's method of processing text-like pixels according to Kodaira would

able to allow the color conversion capable from one color space to another. This would improve

processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Averbuch according to Kodaira.

12.   Claims 8, 10, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lee et al. U.S. Patent No. 6,160,913 and Fan et al. U.S 6,757,081 as applied to claims 1-3 above.

Regarding claim 8, Lee teaches a method of pixels classification (column 6). However, Lee does not explicitly teaches the method of classifying edges of pixels wherein pixels can be classified as non edge, white edge or black edge.   Fan teaches a method of processing text-like of the image (column 2, lines 30-35) wherein pixels are classify as non edge, white edge or black edge (column 3, lines 55-64; column 10, lines 10-25; and column 16, lines 3-15). Modifying Lee's method of processing text-like pixels according to Fan would able to classify pixels of image to more specific regions whether black edge, white edge or no edge for further processing. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Lee according to Fan.

For claim 10, Fan also teaches the method wherein classifying line segments o pixels starting from a first side of a line proceeding to a second side of the line identifying consecutive segments of pixels as non edge, white edge or black edge (FIG. 16; column 3, lines 55-64; column 10, lines 10-25; and column 16, lines 3-15).

As to claim 15, Fan discloses the method wherein step (h) performing pixel connectivity analysis of pixels within the image (FIG. 7, element 120) comprises:

Identifying aggregates of pixel having been identified as candidates for text, the aggregates being sub-blobs (FIG. 20) (FIG. 7, element 122); and

Collecting statistics with respect to each sub-blob, wherein said statistics are selected from the group consisting of total number of pixels (Fig. 7, "Blob information") (column 10, lines 5-10).

Regarding claim 16, Fan further teaches the method wherein step (c) examining sub-blobs of pixels within the image comprises: examining each sub-blob to determine whether it is non text (the process of classifying text only pixels will also classify non text as well) (column 3, lines 25-30, 45-47, and 60-67).

Regarding claim 17, please refer back to claims 10 and 16 for further teachings and explanations.

For claim 18, please refer back to claims 1-3 for further teachings and explanations.

13.   Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lee et al. U.S. Patent No. 6,160,913 and Brooks et al. U.S 6,406,062 as applied to claim 18 above.

Regarding claim 19, Lee does not specifically teach outputting a two layer image representation compatible with PDF Reference 1.2. Brooks further teaches a method that use Adobe Photoshop to produce "layer" images as "pdf" file (PDF reference). Modifying Lee's method of processing text-like pixels according to Brooks would able to produce layered images using Adobe Photoshop Software. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Lee according to Brooks. Plus, the Examiner takes Official Notice that it is well known in the art that different PDF Reference Version can be use to output layers image representation.

For claim 21, please refer back to claim 19 for the explanation.

Allowable Subject Matter

14.   Claims 7, 9, 11-14, 20, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

CONCLUSION

15.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

The following patents are cited to further show the state of the art with respect to claim 1:

U.S. Pat. No. 5,767,978 to Revankar, teaches image segmentation system.
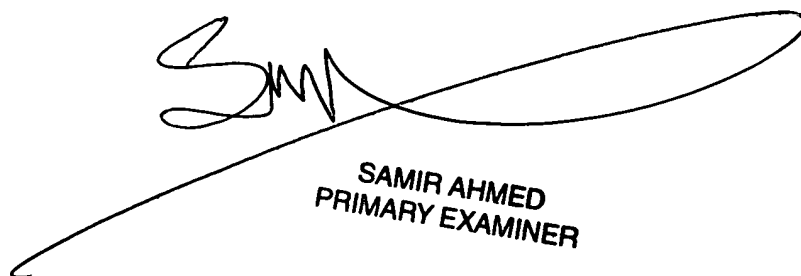
U.S. Pat. No. 6,246,794 to Kagehiro, teaches method of reading characters and reading

postal addresses.

16.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Brian Q Le whose telephone number is 571-272-7424. The

examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Amelia Au can be reached on 571-272-7414. The fax phone numbers for the

organization where this application or proceeding is assigned are 571-273-8300 for regular

communications and 571-273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to TC Customer Service whose telephone number is 703-306-0377.

BL
September 9, 2005

SAMIR AHMED
PRIMARY EXAMINER